CLAIMS

1. An RFID tag antenna system suitable for receiving an RF signal, the RFID tag antenna system comprising:

a planar two arm spiral structure arranged to receive the RF signal, the two arms electrically isolated from each other but arranged defining a gap between the two arms,

an electronic circuit electrically connected to the arms straddling the gap and arranged to receive the RF signal from the planar two arm spiral antenna, and

means for sensing the receipt of the RF signal by the electronic circuit.

2. The RFID tag antenna system of claim 1 wherein the each arm of the planar two arm spiral structure is identical to the other except one is rotated the plane by 180 degrees from the other.

3. The RFID tag antenna system of claim 1 wherein a center is defined at the middle of the gap, and wherein each arm of the planar two spiral structure defines and inner radial spiral and an outer radial spiral arranged so that the width of each arm grows as the arms radiate farther from the center.

4. The RFID tag antenna system of claim 3 wherein the inner and outer radial spirals adhere to a logarithmic function.

5. The RFID tag antenna system as defined in claim 3 wherein at any point equidistant from the center the widths of each arm are equal to each other and equal to the spaces between each arm.

6. The RFID tag antenna system of claim 1 wherein a lateral dimensions of the planar two spiral arm structure are less than about five inches by less than about two inches.

7. The RFID tag antenna system of claim 1 wherein a lateral dimensions of the planar two spiral arm structure are less than about two inches by less than about one inches.

8. The RFID tag antenna system of claim 1 wherein each arm of the planar two arm spiral structure comprises a thin conductive layer built onto a substrate.

9. The RFID tag antenna system of claim 1 wherein the electronic circuit comprises:

a network that matches the spiral antenna electrical impedance and that receives the RF signal from the planar two arm spiral antenna and provides an RF output signal, and

an input circuit that receives and rectifies the output RF signal forming a DC signal, the input circuit including a capacitor the stores energy from the DC signal.

10. The RFID tag antenna system of claim 9 wherein each arm of the planar two arm spiral structure comprises a thin conductive layer built onto a substrate, and further wherein the matching and the input circuit is built onto the substrate.

11. The RFID tag antenna system of claim 10 further comprising a second substrate is mounted to the first substrate where the input circuitry built onto the second substrate and electrical connections are made from the matching network and the input circuit.

12. A method for receiving an RF signal from an RF signal generated as part of an RFID tag system, the method comprising the steps of:

arranging a planar two arm spiral structure to receive the RF signal,

defining a gap between the two electrically isolated arms,

electrically connecting an electronic circuit straddling the gap and arranged to receive the RF signal from the planar two arm spiral antenna, and

sensing the receipt of the RF signal by the electronic circuit.

13. The method of claim 12 further comprising the steps of:

forming each arm of the planar two arm spiral structure identically to the other except, and

rotating one arm in the plane by 180 degrees from the other.

14. The method of claim 12 further comprising the steps of:

defining a center at the middle of the gap, and

forming each arm of the planar two spiral structure with an inner radial spiral and an outer radial spiral, and

arranging the width of each arm to grow as the arms radiate farther from the center.

15. The method of claim 14 wherein the step of forming each arm comprises the step of using a logarithmic function to form inner and outer radial spirals.

16. The method of claim 14 further comprising the step of forming each arm such that at any point equidistant from the center the widths of each arm are equal to each other and equal to the spaces between each arm.

17. The method of claim 12 further comprising the step of forming a lateral dimensions of the planar two spiral arm structure that are less than about five inches by less than about two inches.

18. The method of claim 12 further comprising the step of forming a lateral dimensions of the planar two spiral arm structure that are less than about two inches by less than about one inches.

19. The method of claim 12 further comprising the step of forming each arm of the planar two arm spiral structure with a thin conductive layer built onto a substrate.

20. The method of claim 12 further comprising the steps of:

providing a network that matches the spiral antenna electrical impedance and that receives the RF signal from the planar two arm spiral antenna and provides an RF output signal, and

providing an input circuit that receives and rectifies the RF output signal forming a DC signal, the input circuit including a capacitor that stores energy from the DC signal.

21. The method claim 20 further comprising the steps of:

building each arm of the planar two arm spiral structure with a thin conductive layer built onto a substrate, and

building the network and the input circuit onto the substrate.

22. The method claim 21 further comprising the steps of:

mounting the input circuitry built onto a second substrate, and

making electrical connections from the matching network to the input circuit.